TROPICAL RAINFALL MEASURING MISSION

March 22, 1999 - March 28, 1999
DOY 081 - 087
Day of Mission 480 - 486

TRMM MISSION OPERATIONS

- TRMM is flying in the -X Forward direction as of 99-085, at 14:51:27z.
- The next Yaw maneuver is scheduled for April 16 (99-106).
- Delta-V maneuver #89 is scheduled for April 1 (99-091) using the ISP thrusters.
- The Beta angle range for DOY 088 to 094 is -8.5° to -27.6°.

TRMM SUBSYSTEM OPERATIONS

Attitude Control System

Delta-V maneuver #87 was successfully conducted on 99-081 at 16:04:30z and 16:50:00z, for durations of 45.0 and 15.5 seconds respectively, using the LBS thrusters. The off-modulation of the +Pitch thruster (#2) was 22.5% and 22.6% respectively (77.5% and 77.4% on time). The off-modulation of the -Yaw thruster (#1) was 8.1% (91.9% on time) during the first burn. The remaining fuel is 746.8 kg and the final apogee and perigee height is 354.89 km x 347.52 km.

On 99-085 at 14:51:27z a Yaw maneuver was successfully performed from +X to -X.

Delta-V maneuver #88 was successfully conducted on 99-086 at 16:22:35z and 17:08:24z, for durations of 44.625 and 21.375 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) was 34.5% and 37.4% respectively (65.5% and 62.6% on time). The remaining fuel is 745.3 kg and the final apogee and perigee height is 354.89 km x 347.55 km.

There was no ESA quadrant interference during the week due to the lower solar beta angle range.

The ephemeris problems with the dynamic simulator were determined to be due to coding and have been fixed. Testing of the new ESA FDC limits now continues.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard continues to drift in the negative direction. The frequency standard offset remains at x759 with a current drift rate is -1.48 μs/hr. The UTCF remains at 31535996.867749 sec with a current drift value of -300 μs.

Q-Channel Restarts occurred on 99-082 at 10:51:38z and 19:24:58z.

An EDAC Multi-Bit error occurred on 99-085 at 12:17:19z.

The MS task missed one update on 99-087 at 01:35:39z due to a large dataset release.

An Invalid Stream Id was received from VIRS on 99-087 at 18:05:31z.

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Power Subsystem

The Power subsystem operated nominally during this period. Due to beta angles close to 0° and the ongoing CERES testing, both SOC counters have been operating below 100% since 99-081. There are no plans to change any settings at this time.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem has performed nominally during this period.

SPACECRAFT INSTRUMENTS

CERES

CERES personnel are developing a plan for operating the instrument with the +15 V DAA anomaly. The FOT proposal which describes the new method for leaving CERES powered on for SunAcq/Safehold events is awaiting final review, approval and testing.

During the time period 99/081 through 99/084, the CERES instrument was powered on for science collection with the INDOEX ground test. The table below shows the activities that were executed during the week. The +15 V DAA converter voltage has remained below the 20 V saturation threshold throughout the test.

GMT	Activity
99-081/05:20z	Power ON
99-081/07:35z	Scan at 180°

99-08/11:56z	Power OFF
99-082/03:08z	Power ON
99-082/04:07z	Scan at 180°
99-082/10:41z	Power OFF
99-083/05:09z	Power ON
99-083/05:24z	Scan at 180°
99-083/11:13z	Power OFF
99-084/03:56z	Power ON
99-084/05:27z	Scan at 180°
99-084/10:03z	Power OFF
99-085/05:22z	Power ON
99-085/05:37z	Scan at 180°
99-085/10:33z	Power OFF

The next test period is planned for March 29th through April 1st.

LIS

LIS performed nominally during this time period.

PR

PR performed nominally during this time period. The list of Internal Calibration times for the week is listed below.

1999:081:03:37:29 - 03:39:39z
1999:081:19:55:44 - 19:58:13z
1999:082:02:26:02 - 02:28:15z
1999:082:18:47:06 - 18:48:30z
1999:083:02:48:59 - 02:51:07z
1999:084:01:37:41 - 01:39:52z
1999:084:17:56:41 - 18:00:18z
1999:085:02:00:02 - 02:02:09z
1999:086:00:48:26 - 00:50:36z
1999:086:17:06:07 - 17:11:11z
1999:087:23:59:44 - 1999:088:00:01:54z

TMI

TMI performed nominally during this time period.

VIRS

VIRS performed nominally during this time period. The Cold Stage reached a maximum temperature of 111.8°K near beta 0°.

GROUND SYSTEM

String 2 has now been returned to operations as a real-time hot backup and the prime mission planning server. GTAS has also been returned to operations and configured to string 2 again. String 3 has now been removed and is being upgraded this week.

On 99-083 the incorrect AOS RTS was stored for an event causing TDRS East to be tracked instead of TDRS West (ER#94). This was remedied, the event was extended, and no data was lost.

Event Reports

#94 S/C misconfiguration: see Ground System section.

Generic Late Acquisition Reports (for TTRs 19639)

No Generic Late Acquisitions occurred during this week.

New Anomaly

No new Anomaly Reports were opened during this week.

Recurring Open Anomalies

No recurring open anomalies occurred during this week.

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